DOCUMENT RESUME

ED 223 344 PS 013 188

AUTHOR Cocking, Rodney R.; Copple, Carol
TITLE Social Facilitation of Representational Awareness.
PUB DATE Aug 82
NOTE 16p.; Paper presented at the Annual Meeting of the American Educational Research Association (New York, NY, March 19-23, 1982).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Age Differences; Audiotape Recordings; Cognitive Development; *Freehand Drawing; *Metacognition; Peer Influence; *Perception; *Preschool Children; Preschool Education; Social Cognition; *Verbal Communication
IDENTIFIERS *Representational Competence; *Representational Thinking

ABSTRACT

This study investigated preschool children's awareness of the nature of pictorial representation and their understanding of their own efforts to depict. Seventy-six subjects participated in drawing sessions held at 2-week intervals throughout the 8-month school year. Children's spontaneous comments during small-group drawing sessions were audiotaped and transcribed by an observer. With respect to the children's own drawing, coding categories used were "naming," "describing," "evaluation," and "planning." The final coding category was "reacting to a peer comment." Evidence was found of an approach to drawing which is increasingly reflective with age, even within the narrow range of 3 to 5 years. Subsequent fine-grained and qualitative examinations of children's comments revealed numerous aspects of children's awareness of the nature of pictorial representation and of their own problem-solving struggles. Two such aspects are discussed: the children's awareness of the "audience," or those who will potentially view the drawing, and the children's consciousness of the handling of space and sequence in drawings. Additionally, as part of a continuing investigation of the influence of social context on representational awareness, five event categories typical of peer interaction during drawing sessions were identified. Illustrative examples of children's interaction while drawing are appended. (RH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

ED223344

SOCIAL FACILITATION OF REPRESENTATIONAL AWARENESS

Rodney R. Cocking*

Carol Copple

AERA, 1982 New York

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Rodney R. Cocking

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

*National Institute of Education
Teaching & Learning Division
Learning & Development Group
1200 19th Street, N.W.
Mail Stop 7
Washington, D.C. 20208-1101

PS013188

SOCIAL FACILITATION OF REPRESENTATIONAL AWARENESS

Rodney R. Cocking*

Carol Copple

Abstract

The study examines preschool children's awareness of the nature of pictorial representation and of their own efforts to depict. The data consist of children's spontaneous comments as they draw in small groups. The paper focuses on 2 portions of the data: children's consciousness of space and sequence in drawing, and their awareness of the problem of others' understanding of what they draw. From a large body of data gathered in a setting conducive to verbalization, it was found that children showed higher levels of such awareness than typically ascribed to them, both in degree of metacognition and in extent of other-person awareness. In comparison with individual drawing sessions, group sessions yielded greater diversity of commentary. While children drawing alone primarily named parts of pictures or told stories about them, children in group sessions planned aloud, evaluated their own and each others' drawings, and explained what they had done. Such comments suggest that even 4-year-olds are beginning to be more deliberate in their representational efforts. It appears that a reflective, "metapictorial" attitude toward drawing, as seen in planning and evaluation, increases through the preschool period.

*Author Cocking's Address:

National Institute of Education
Teaching & Learning Division
Learning & Development Group
1200 19th Street, N.W.
Washington, D.C. 20208

This chapter will address three facets of the growth of planning in children: developmental and age trends; audience awareness; and finally, event categories that help the child structure, and hence plan, an activity.

We will draw upon two types of data in the discussion of these three facets of planning: 1) children's consciousness of space and sequence in drawing; and 2) children's awareness of problems others may have in understanding what they draw.

The discussion will never intend to imply cause as we look at the social influences on representational awareness and cognitive behaviors: we are not arguing that representational awareness is caused by others. Rather, the role of audience is facilitative by making its presence felt, either through its commentary or its request for more information.

Children's Drawing as Cognition

Drawing is one of the representation modalities which is undergoing rapid development in the preschool years, during which time children show a great deal of spontaneous interest in the activity itself. The significance of children's art as a cognitive phenomenon has been recognized by numerous investigators in the past (Goodenough, 1926; Harris, 1963; Arnheim, 1967; Piaget, 1969). Goodnow (1977) has recently emphasized the problem-solving aspect of children's attempts to draw representationally. One dimension which is important for the developmental psychologist or educator in charting the emergence of a basic representational system is the child's own understanding of the system or mode of representing. What does the child understand about the possibilities, the constraints, the structure of pictorial representation? How consciously does the child invent solutions to representational problems? Does the child have standards which he struggles to attain in his drawings? Does he thinks of his drawing as something which can convey information to others?

These cognitive and meta-cognitive questions have not thus far been much investigated, partly because the focus of past research has generally been what children drew rather than on what they said. Drawings were often collected in situations which were not conducive to children's talking as they drew; in fact, verbalizations were rarely recorded. As investigations began to take place often in naturalistic settings, such as the home (e.g., Fenson, 1977), and as there was more interaction between the experimenter and the children, investigators noticed that children said interesting things as they drew. In the present research, children drew in small groups, a setting fertile of children' spontaneous verbalization about their efforts at representing objects and events.

The 76 subjects were middle-class children in five preschool classes. Drawing sessions were held at two-week intervals throughout the eight-month school year. The age range of the children at the initial session was from the youngest of 3 years, 4 months to the oldest 4 years, 9 months.

The children drew in groups of three or four in a small room adjacent to the classroom. A familiar experimenter provided them with magic markers and paper and described a topic which she requested the children to draw. The topics were generally based on experiences which children had (e.g., a field trip) or which they had regularly (e.g., snack time). If the children's drawings were unrelated to the topic, the experimenter gently reminded them of the initial suggestion. However, if the children did not want to draw anything related to the suggested topic, they were left to proceed as they wished. The sessions were audiotaped and transcribed later by an observer who took notes during the sessions. To assure that the commentary in these sessions was not a function of implicit task demands, data were also gathered in the classroom by placing a microphone on a table where the same drawing materials were available. Data from the classroom and from the out-of-class sessions were sufficiently similar to permit the assumption that the out-of-class group sessions were typical of conversations when children were together. As an aside, classroom session data revealed two noticeable things: 1) frequencies of responses were lower and 2) language used was of comparable structure. Thus, the data say something about the strong influences of an adult for evoking verbalizations.

The sessions were recorded on audiotape and coded by one of two observers who was present during the drawing periods. The major coding categories were naming, describing, evaluating, and planning with respect to the child's own drawing; and reacting to a peer comment. Interobserver reliability ranged from .84 to .92. Analysis of variance was performed to determine if there were differences by age, sex, or classroom in the tendency to make the various kinds of comments (i.e., naming, describing, planning, evaluating own drawing, evaluating peer drawing). Significant age effects were found for planning and evaluative statements.

The three strands of results are as follows: (A) Developmental and age trends; (B) Audience awareness; and (C) Event categories in the social context.

Results

A. Developmental and Age Trends

The results of statistical analyses of certain aspects of the data have been reported previously (Cocking & Copple, 1977). For these analyses verbalizations were coded into broad categories such as naming,

describing, planning, and evaluating. Verbal statements of planning and evaluating were found to be more characteristic of the older children within the three of five-year-old range.

In peer drawing sessions, there was not only more verbalization about the drawing, but a wider range of commentary as well. While children drawing alone primarily named parts of their drawings or told stories about them, in group sessions children planned aloud, evaluated their own and each others' drawings, and explained or justified the way they had drawn things. Such verbalizations suggest that even 4-year-olds are beginning to be more deliberate in their approach to drawing. The significant age effect was in the hypothesized direction. In the older children, particularly the girls, there was a greater tendency to engage in such reflective behaviors as explicitly planning the picture and judging the success of one's own or others' representational efforts. Children begin noting problems and discrepancies in the likeness to the real thing, as well as expressing pleasure when they feel a representational attempt has been successful.

It should be noted that these developmental changes are not an artifact of older children talking more as they drew. This was determined by performing all analyses with percentage data (number of verbalizations of each category/total number of task-related verbalizations), as well as raw data.

In summary, evidence was found of an approach to drawing which is increasingly reflective with age, even within the narrow age range of 3 to 5. This developing "metapictorial" capacity would seem to be related to other reflective behaviors which emerge at about this age, such as metalinguistic awareness.

B. Audience Awareness

In spite of our excitement over the developmental and age trends, it seemed that even more interesting developmental changes and achievements were being obscured by the use of such broad categories. In subsequent work, we undertook far more fine-grained and qualitative examination of those comments which reflected children's awareness of the nature of pictorial representation and of their own problem-solving struggles. From among the numerous aspects of such awareness which were identified in our data, we have chosen two to discuss.

The first of these is an aspect of the child's conception of the nature of representation: awareness of the "audience", either a specific person or the generalized other, who will potentially view the drawing. The second aspect of representational awareness to be discussed lies within the problem-solving domain: the child's consciousness of her handling of space and sequence in her drawing. With respect to planing, the former is an issue of perspective: planning so that others will understand. The latter (space and sequence consciousness) is planning as an ancillary executive aid.

Insert Table 1 About Here

It was found that comments showing an "audience awareness" were more common when the experience of the anticipated viewer was manifestly different from that of the child. For example, in some cases the experimenter had not been with the children on a field trip experience or the child was drawing the picture to show to a parent who was not familiar with the classroom routine. In such situations children were more likely to verbalize an awareness of the fact that the viewer might not be able to interpret the drawing, e.g., "My dad might not know this is a rabbit."

Another type of audience awareness comment shows a consciousness that the success with which a picture conveys information to the viewer depends on how it is drawn or on what is included. For example, one child said, "I'm gonna draw my house so that Colleen can see what it looks like." Another child, possibly doubtful of the accuracy of her rendition of a well-known landmark, said, "I'm gonna put an 'M' so they'll know it's McDonald's."

These higher levels of audience awareness in the preschool child are particularly interesting and theoretically important, but it will also be useful to examine related categories of verbalizations which come earlier. In addition, data from an ongoing study with kindergarten and first-grade children will elucidate the developmental progression in consciousness of drawing as a communicative act. Table 2 gives examples of the categories we developed to classify the children's comments.

Insert Table 2 About Here

Goodnow (1977) has reported developmental changes in children's handling of problems of sequence and space in drawing. By examining the verbal data that accompany the drawing process, we can see not only how the children actually deal with these problems but also what they think. We can get clues about the extent to which children are reflective in their approach to the solving of various organizational problems. In children's verbalizations we find a reflection of their awareness of their own problem-solving processes in the representational realm. Several steps in the evolution of conscious strategies of planning and dealing with space were identified: (1) Description of one's spatial or sequential dilemmas after the fact; (2) One-step-ahead articulation of a plan for drawing sequence and/or spatial arrangement; (3) Planning of one's drawing sequence and/or use of space two or more steps ahead but with no reference to the reasons for such plans; and (4) Planning of one's solution or articulation of one's strategy for dealing with a stated spatial or sequential problem.

Our description of the audience-awareness and "meta-organizational" comments represents only two aspects of the data on children's representational awareness. These two were chosen for discussion in order to exemplify the way in which spontaneous commentary during the drawing process sheds light on what drawing is to the child. Through such comments we get an idea of what the child understands about the nature of pictorial representation as well as what he is aware of in his own mental and motor efforts to depict things in the world. By examining a large body of data gathered in a setting conducive to spontaneous verbalizations, we were able to see that children have a higher level of such awareness than has previously been imagined. There were numerous comments which showed a meta-cognitive dimension in young children's artistic endeavors. Even more notable is the fact that the children's comments reflected a degree of perspective-taking, an awareness of how their drawings will be interpreted by others.

C. Event Categories In A Social Context

For any domain of metacognition, one question of interest is how the capacity develops and what role, if any, the environment plays. The present research examines the social context of drawing. In our research we have noted that children do a substantial amount of borrowing, copying, and incorporating drawing routines from peers as have others (Fenson, 1977; Gardner, 1980). The question here is whether peer interaction can be hypothesized to play a role in the development of representational awareness. We began by investigating the nature of peer interaction during drawings.

To provide a description of the context for children's developing representational awareness, interactions were sorted into major event types. Five typical event categories emerged: (1) A hears B comment on a representational problem or solution; (2) A hears B comment on an aspect of the nature of drawing or on the drawing process; (3) A hears B ask how to draw something or find fault with his own drawing; (4) A identifies B's drawing differently than B does; and (5) A is confronted by a question or critique from B.

Insert Table 3 About Here

For each of the event types, the theoretical rationale for a link to representational awareness is Piaget's concept of Reflexive Abstraction. In some cases there is a conflict between the child's judgment or perception and that of a peer; in others, the child is confronted with a level of representational awareness that is not identical to his own. In either case there is potential for the child's existing understanding to be challenged or extended, and the result is either consolidation of what one already knows and being forced to

verbalize the principles to someone else; or secondly, being forced to confront a new reality that ultimately pushes him/her along to think through the situation a little differently.

These five types of events are prominent in the conversations of children as they draw in groups. The next step in examining the role of the social context will be to show an empirical link between such events and children's growth in representational awareness. A useful research strategy in attempting to characterize a given domain of cognitive or meta-cognitive development is to begin by observing the naturalistic context within which it emerges. The current study has used this strategy, identifying in the peer environment those events that are plausible candidates for nurturing and provoking representational awareness.

TABLE 1

REPRESENTATIONAL AWARENESS: AUDIENCE

Drawing can show what things look like to someone who doesn't know:

1. H: That's to show you where the plant at McDonald's is.

2. J: I'm gonna show you where they make the Egg McMuffins And this is what you call an egg ring.

3. R: I'm gonna draw a house — to show you how the McDonald's looked.

4. L: I'm gonna put my house on it so Colleen can know what my house looks like.

5. C: I'm gonna put some hair on him so nobody will know who it is, not even Colleen [plans to disguise his person because otherwise he can be identified by audience]

The more you add to your drawing, the likelier the other is to identify it correctly

1. C: What do you think I'm going to make? [to adult]
   E: Oh, let's see. It has 2 eyes. Gee, let's see. Mike, do you have an idea what it could be? [Mike doesn't respond]
   C: Adding something else.

2. [After peers have guessed incorrectly what his drawing is, adds more]
   M: Now guess what it is.

3. D: [to S]: What are you making?
   S: You'll see when I'm done.
   D: Is it a train with all these wheels?
   S: No, it couldn't be that. You'll see. Just wait. You'll see.
   D: It looks like a train, on a track.
   S: See? Now it doesn't look like a train.

4. S: What do you suppose this is?
   D: A gate?
   S: Guess again.
   D: I don't know what it is. I give up.
   S: It's a pencil.
   D: It doesn't look like a pencil.
   S: It will! It will!

5. T: [after some guesses of whom he is drawing] No, try to guess again. Not now, when I'm done.
   C: It will be easier.

Drawings can fail to convey information accurately, can be misinterpreted

1. T: This is not a church. Our house is this huge.

2. S: These are not the eyes [on Halloween mask in drawing] These are the puffs (?)

3. K: I'm going to put an 'M' so they'll know it's McDonald's.

4. C: And this is supposed to be a squirrel sticking his head out here.

The particular viewer makes a difference in feasibility of identification of drawing
(Corollary: you draw differently depending on the viewer)

1. C: I don't know if it looks too much like a bunny to my Dad, but I do know if it looks too much like a bunny to Jude [peer who was present during the drawing of the bunny].

2. H: [drawing a car for a puppet who doesn't know what cars look like] Here, I'll show you how it looks different from a bus. It's longer.

Interactive episodes with salient audience reaction

1. A: [to T about her drawing] Oh, that ball doesn't look very good in drawing it.
   T: So, it could be a ball.
   A: Well, it doesn't look rounded up.
   T: No, this is an egg I'm making. An egg, that is the shape of an egg.

2. M: I'm making you, Kay. Thea, Im making Kay.
   D: That isn't Kay. It looks like a boy.
   M: It's Kay because you notice the brown hair.

3. T: Your 'goon' is lying down.
   M: Nope, standing up. That's how a goon looks like. Its legs are crossing that way.

4. M: [about T's drawing] I think it's a spider.
   T: You're right!
   M: I knew it was a spider!
   E: What about it made you think it was a spider?
   M: The legs... All the legs.

Table 2

THE CHILD'S UNDERSTANDING OF THE NATURE OF DRAWING

Possibility/Need for Likeness

1. "Hey, you have to do hands like that. Look, I'll show you." (Instructing peer on achieving likeness)

2. "That's not how big airplanes are [to peer]. They're bigger than that. I'm making mine bigger than yours." (Critiquing peer likeness)

3. "Are mustaches up here or down there [above or below the mouth; asking E] (Soliciting information in order to achieve likeness)

4. "I'm not finished with mine yet. What did I forget? The body and the neck." (Reflecting on completeness/accuracy of likeness)

5. "I know how to make kids but not a playground." ('Knowledge of not knowing' how to create the likeness)

6. "It's going to be hard to draw my dress." (Knowledge of difficulty of creating the likeness)

Possibility/Limitation of Drawings in Conveying Information

1. "Guess what this is?" (Recognizing possibility of conveying information)

2. "I'm gonna draw a house to show you how the McDonald's looked." (")

3. "I'm gonna put my house on it so Colleen will know how my house looks."("

4. "This is not a church. Our house is this huge." (Recognizing possibility of misinterpretation)

5. "These are not the eyes [in picture of Halloween mask] These are the puffs." (Recognizing possibility of misinterpretation)

6. "I'm gonna put an 'M' so they'll know it's McDonald's." (Recognizing possibility of misinterpretation)

Possibility of Exercising Selection/Discretion in Drawing

1. "Now I'm making a real bad storm but I'm not going to do it like Henry's." (Recognizing that there are different ways of drawing X)

2. "You don't have to make everything." (Recognizing the possibility of selection in drawing)

3. "I'm not gonna make all the rugs. I'm just gonna make some of it." (Recognizing the possibility of selection/discretion)

4. "I think I'll get a darker color for my dress." (Recognizing the psibility of selection/discretion)

Table 2 (Continued)

Possibility of Altering Reality in Drawing

1. [In response to peer suggestion of making her McDonald's purple] "It's not funny. You can do that. It doesn't matter what color you make it."

2. "I'm going to make the elevator. There's no elevator there, but I want to make one."

3. "That's black 'cause that's how I want McDonald's to look."

4. "Now I'm going to make a black boy. Guess what? Girls have hair and boys have hair, but I'm making a boy that's bald. No hair at all, but a little, I guess."

Possibility of Drawing Objects or Events in Various States, Forms, or Positions

1. "That's when the snow is just falling. So we'll put a little grass in 'cause that's when the snow is just falling."

2. "Now, I'm going to make Kathy. She's going to be happy in this one."

3. "No, I'm not making that kind of duck [duck in the air]. I'm making a mad duck."

4. [In reaction to peer saying he was drawing a rain storm] "I'm gonna make mine only be sprinkling."

Difficulty of Conveying Certain Aspects in Drawing

1. [Child draws on the back of his page the mirror-image of the pig he has drawn on the front] "Here's the mouth. The other part is in the back. I did the other part in the back."

2. "You can only see two wheels [of a car]. The other two are on the other side."

Table 3

CATEGORIES OF PEER INTERACTION

I. Child$_1$ questions or criticizes drawing of Child$_2$

(1) A: Oh, that ball doesn't look very good in drawing it [T's drawing]
T: So, it could be a ball.
A: Well, it doesn't look rounded up.
T: No, this is an egg I'm making. An egg, that is the shape of an egg.

(2) D: Why all the colors purple?
T: 'Cause.
D: 'Cause why? 'Cause why?
T: 'Cause — That's right. A person is not all colors. A person is only white.

(3) J: I'm putting my purple eggs.
C: They are not supposed to be colored purple. They could be either brown or white. Those are the only colors they could be.
J: There's some yellow eggs.
C: Yellow eggs. Hey, they could be your white eggs, Jennifer.

(4) B: It's red - that's a Phillies jacket alright.
C: That doesn't look like a Phillies jacket.
B: Wowee. Well, it is red and it has a little white patch on it.

(5) M: [to C. about his duck] That looks like a worm, Courtney. The one flying up in the air looks like a worm, Courtney.

(6) S: [to C. about her picture] You can hardly see yourself.
C: Well, you can see me.
S: Hardly.
C: You can see the grasss behind me.
S: Hardly, hardly.

II. Child$_1$ and Child$_2$ identify the same picture differently

(1) C: Oh, you drew a sun.
S: It's a flower.

(2) M: Now guess what it is.
D: Looks like a kangaroo. It has big ears.
M: But it's not a kangaroo.

(3) S: What do you suppose this is?
D: A gate.
S: ...It's a pencil.
D: It doesn't look like a pencil.
S: It will. It will!
D: That is not a pencil. A pencil has a straight line. There's a line and a point like this.

Table 3 (Continued)

II. Child$_1$ and Child$_2$ identify the same picture differently (continued)

(4) T: Your goon is lying down. (The children are drawing "goons" from a favorite song).
M: Nope, standing up. That's how a goon looks like. Its legs are crossing that way.

(5) D: What are you making?
S: You'll see when I'm done.
D: Is it a train with all these wheels?
S: No, it couldn't be that. You'll see. Just wait. You'll see.
D: It looks like a train. On a track.
S: See, now it doesn't look like a train.

III. Child$_1$ hears Child$_2$ asking how to draw something or finding fault with his/her own drawing

(1) J: Does trees — don't trees have bottoms like that [to E]

(2) M: Are mustaches up here or down there? [to E]

(3) S: I made the arms too long.

(4) C: I made a kitten that looks like a mouse.

(5) L: I don't remember how her tail is.

(6) C: I just did a mistake. He's [the duck] looking away from here. He's supposed to look that way but he's looking <u>that</u> way.

(7) T: I don't know how to make a duck.
L: So there. It's 2 lines, a line across, and 2 lines, a line across and a head and a beak.
T: I still don't know how to make a duck.
L: Try all that and then you'll do it.

IV. Child$_1$ hears Child$_2$'s comment expressing an aspect of the nature of drawing or the drawing process

[See Table 1 for numerous examples] Some additional examples:

(Verbalizing about one's planning, reflecting, or problem-solving)

(1) K: I have to think what it looked like.

(2) C: I'm making the body first so I'll have room for it all.

(3) K: Here, I have to try it on this paper (a trial page) 'cause I did it wrong. In case I did it wrong, I try it on this paper.

(4) M: First I'm gonna make the head and then the body.

Table 3 (Continued)

IV. Child$_1$ hears Child$_2$'s comment expressing an aspect of the nature of drawing or the drawing process (continued)

(5) J: See him? He's talking with his mouth open, with an "O" in this mouth, with pink.

(6) L: I'm making his arm crooked 'cause he's throwing.

(7) T: I got it. I got it... I have to put him [a puppet] down here [bottom of page] for his feet so I can put the strings all the way up here. I put the handle right here. I put the strings all the way up to here.

(Verbalizing about one's drawing schemes)

(8) H: I'm making a circle for the face.

(9) M: A dot for the raindrop. A big dot for the snow.

(10) L: It's 2 lines, a line across and 2 lines, a line across, and a head and a beak.